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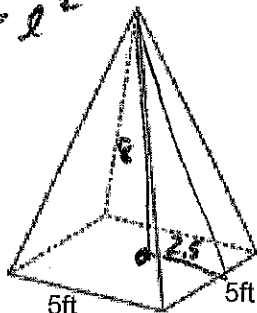
Key

Date

## 202 Area and Volume of Cones and Pyramids

1. The figure is a square pyramid.

$$8^2 + 2.5^2 = l^2$$



$$h = 8 \text{ ft}$$

$$l = 8.49$$

$$p = 20 \text{ ft} \quad 5 \times 4$$

$$B = 25 \text{ ft}^2 \quad 5^2$$

$$LA = 84 \text{ ft}^2$$

$$TA = 109 \text{ ft}^2$$

$$V = 66 \frac{2}{3} \text{ ft}^3$$

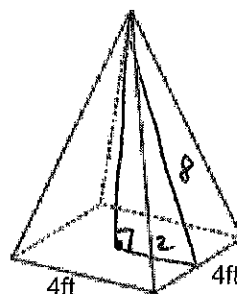
$$LA = \frac{1}{2} 20 \cdot 8.4$$

$$TA = 84 + 25$$

$$V = \frac{1}{3} 25 \cdot 8$$

2. The figure is a square pyramid.

$$8^2 = 2^2 + h^2$$



$$l = 8 \text{ ft}$$

$$h = 7.74$$

$$p = 16 \text{ ft}$$

$$B = 16 \text{ ft}^2$$

$$LA = 64 \text{ ft}^2$$

$$TA = 80 \text{ ft}^2$$

$$V = 41.1 \text{ ft}^3$$

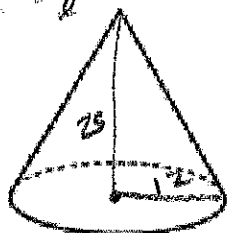
$$LA = \frac{1}{2} 16 \cdot 8$$

$$TA = 64 + 16$$

$$V = \frac{1}{3} 16 \cdot 7.7$$

3. The figure is a cone.

$$25^2 + 12^2 = l^2$$



$$h = 25 \text{ cm}$$

$$r = 12 \text{ cm}$$

$$l = 27.7 \text{ cm}$$

$$p = 24\pi \text{ cm}$$

$$B = 144\pi \text{ cm}^2$$

$$LA = 332.4\pi \approx 1044.3 \text{ cm}^2$$

$$TA = 476.4\pi \approx 1496.7 \text{ cm}^2$$

$$V = 1200\pi \approx 3769.9 \text{ cm}^3$$

$$LA = \frac{1}{2} 24\pi \cdot 27.7$$

$$TA = 332.4\pi + 144\pi$$

$$V = \frac{1}{3} 144\pi \cdot 25$$

4. The figure is a cone.



$$l = 25 \text{ cm}$$

$$r = 7 \text{ cm}$$

$$h = 24 \text{ cm}$$

$$C = 14\pi \text{ cm}$$

$$B = 49\pi \text{ cm}^2$$

$$LA = 175\pi$$

$$TA = 224\pi$$

$$V = 392\pi$$

$$LA = \frac{1}{2} 14\pi \cdot 25 = 175\pi$$

$$TA = 175\pi + 49\pi$$

$$V = \frac{1}{3} 49\pi \cdot 24$$

5. Find the volume of the oblique cone.

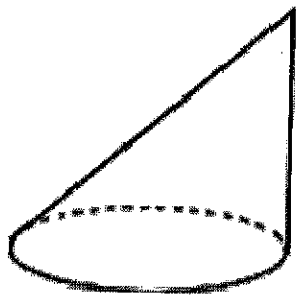
$$h = 12 \text{ cm}$$

$$r = 6 \text{ cm}$$

$$B = 36\pi \text{ cm}^2$$

$$V = 144\pi \text{ cm}^3$$

$$\frac{1}{3} 36\pi \cdot 12$$



6. Redraw the base and answer the questions.

$$BM = 3$$

$$OM = \sqrt{3} \approx 1.73$$

$$OC = 2\sqrt{3} \approx 3.46$$

$$OA = 2\sqrt{3} \approx 3.46$$

$$AM = 3\sqrt{3} \approx 5.20$$

$$h = 2$$

$$l = \sqrt{7} \approx 2.65$$

$$4^2 = (2\sqrt{3})^2 + h^2$$

$$4 = h^2$$

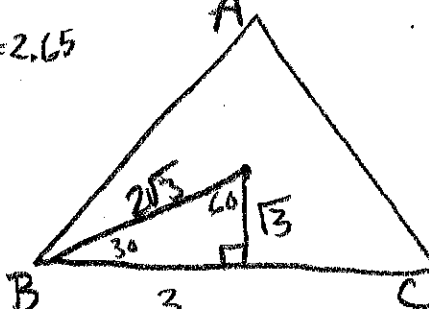
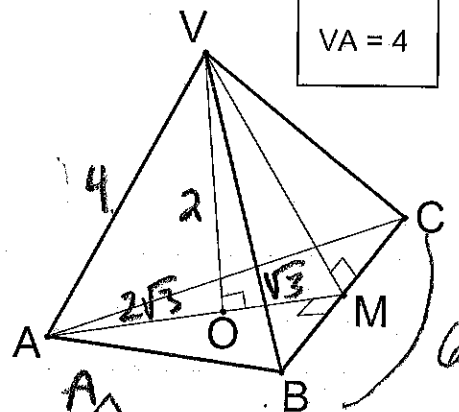
$$2^2 + \sqrt{3}^2 = l^2$$

$$\text{OR } 4^2 = 3^2 + l^2$$

Given:

$$BC = 6$$

$$VA = 4$$



7. Redraw the base and answer the questions.

OM = 3

OA = 6

BM =  $3\sqrt{3}$

BC =  $6\sqrt{3}$

$p = 18\sqrt{3} \approx 31.2$

$B = 27\sqrt{3} \approx 46.8$

$LA = 45\sqrt{3} \approx 77.9$

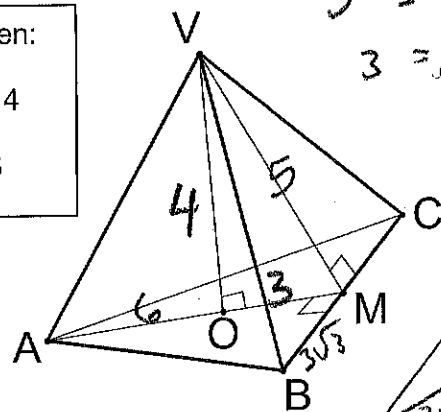
$TA = 72\sqrt{3} \approx 124.9$

$V = 36\sqrt{3} \approx 62.4$

Given:

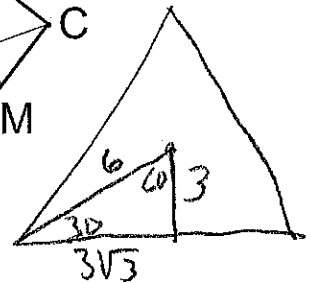
$h = 4$

$l = 5$



$$5^2 = 4^2 + OM^2$$

$$3 = OM$$



8. Redraw the base and answer the questions.

OA = 4

OM = 2

$l = \sqrt{13} \approx 3.6$

MC =  $2\sqrt{3} \approx 3.5$

BC =  $4\sqrt{3} \approx 6.9$

$p = 12\sqrt{3} \approx 20.8$

$B = 12\sqrt{3} \approx 20.8$

$LA = 37.5$

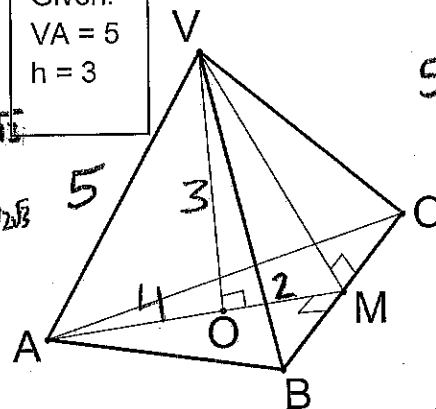
$TA = 58.3$

$V = 12\sqrt{3} \approx 20.8$

Given:

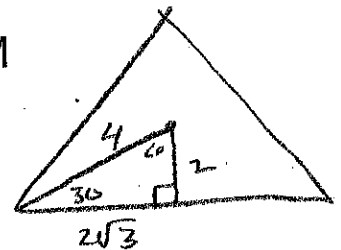
$VA = 5$

$h = 3$



$$5^2 = 3^2 + AO^2$$

$$4 = AO$$



9. Redraw the base and answer the questions.

VC = 10

BC = 12

MC = 6

$l = 8$

OM =  $2\sqrt{3}$

$h = 7.2$

$p = 36$

$B = 36\sqrt{3}$

$LA = 144$

$TA = 206.4$

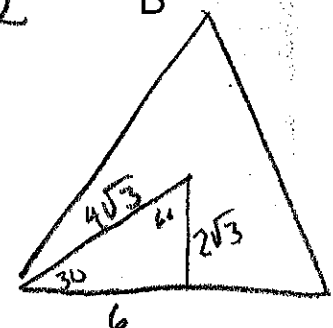
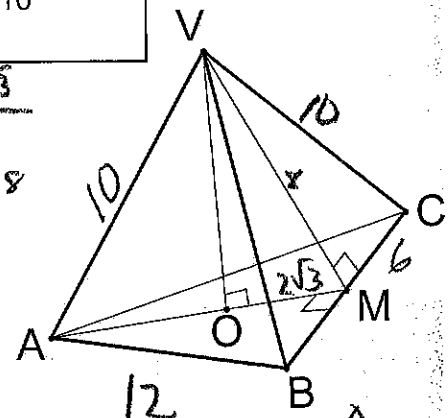
$V = 149.6$

$\frac{1}{3} 36\sqrt{3} \cdot 7.2$

Given:

$AB = 12$

$VA = 10$



$$10^2 = 6^2 + VM^2$$

$$8 = VM$$

$$8^2 = (2\sqrt{3})^2 + VO^2$$

$$\sqrt{52} = VO$$

$$7.2 = VO$$